

The drawing appears to be acceptable.

Amendments

No amendments are proposed so that no new issues of patentability are raised in this paper. Thus the pending claims and the arguments presented may be considered on their merits.

Rejections of Record

Rejection of record to which this paper responds is:

Claims 36-39, 41 and 42 stand rejected under 35 U.S.C. 102(b) as met by Kondo.

Issue summary

A vitalizing feature of the invention as claimed in claims currently pending continues to be overlooked. The argument regarding this feature has been presented in detail repeatedly in earlier papers. The feature is that at least one of the contacts to the buried resistor is made THROUGH THE FIELD PLATE, thus saving surface area on the device.

There is nothing in the Kondo reference that remotely suggests this feature. Thus the rejection of claim 36 as fully met by Kondo is not sustainable.

Argument

This application has been finally rejected. However, it is hoped that the

issue will receive more than summary attention. This prosecution has continued for 8 years. Applicant has argued the same issue over and over. An appeal was filed after an earlier final rejection and the final rejection was withdrawn by the Examiner. Claims have been allowed, then allowance withdrawn. The burden and expense on applicant has been significant. This file is the largest among several hundred on the undersigned attorney's docket.

Yet here we are, years later, with the same claims, the same prior art, and the same rejection.

In the latest Final Rejection, the Examiner has asked applicant to "point out the limitation or limitations which are not disclosed by Kondo (see the embodiment shown in figs. 4-10)".

Applicant responds:

Taking claim 36 for example, relevant limitations are highlighted. Reference numbers to applicant's drawing have been provided to aid in understanding the argument. It should be understood that the numbers are for the benefit of clarity of the argument, not for interpreting the scope of the claim.

36. A method for the manufacture of an
integrated circuit having a field-plated resistor the field-plated
resistor comprising:

- a. forming a resistor body [38, Fig. 4] in a semiconductor substrate, the resistor body having first and second contact regions [44, 32, Fig. 4],
- b. a first insulating layer [40] on the resistor body, the first insulating layer approximately coextensive with the resistor body [see Fig. 8] and having a top surface and a bottom surface,
- c. forming a contact window [44, Fig. 4] in the first insulating layer and extending from the top surface of the first insulating layer through the first insulating layer to the resistor body,
- d. *forming a field plate [48', Fig. 7] on the first insulating layer and approximately coextensive therewith and with the resistor body, the field plate having a top surface and a bottom surface, with a portion of the bottom surface extending through the contact window in the first insulating layer and into contact with the first contact region 46, 46', Fig. 7] of the resistor,*
- e. depositing a second insulating layer [66, Fig. 11], *with a first portion of the second insulating layer at least substantially covering the field plate,*
- f. *depositing a metal layer [80, Fig. 15], with a portion of the metal layer covering the first portion of the second insulating layer,*

- g. patterning [Fig. 16] said portion of the metal layer to form
 - i. *an electrical contact [82] to the top surface of the field plate, and*
 - ii. a plurality of metal conductors [90] formed on the first portion of the second insulating layer.

The italicized portions of claim 36 require that one of the contacts to the buried resistor extends THROUGH THE FIELD PLATE.

This method can be understood in the context of the prior art represented by Kondo by comparing applicant's Fig. 19 (prior art as represented by Kondo) and applicant's Fig. 16 (claim 36). In the prior art, both contacts to the buried resistor are made to either side of the field plate. In Fig. 16, one contact to the buried resistor is made THROUGH THE FIELD PLATE thus saving device area.

The plan views also make this clear. In applicant's Fig. 17 the contact 82, 46, to the resistor overlies the field plate, illustrating the area savings.

In Kondo's plan views, Figs. 2 and 10, both resistor contacts are outside the footprint of the field plate and thus add more area to the device. Fig. 2 shows the embodiment of Fig. 1B, the embodiment on which applicant based earlier arguments. Here the field plate is shown at 7, with both resistor contacts 4-1 and 4-2 to the sides of the field plate. The Examiner then suggested that his rejection was based on Figs. 4-10 of Kondo, not Fig. 1B. But in the context of the argument, Figs. 4-10 and Figs. 1B and 2 are the same. In Fig. 10 the resistor contacts are shown at 39-2 and 39-3, both of which are clearly to the sides of field

plate 39-1. Fig. 1B is just a simpler rendition of Fig. 9. It is evident in both figures that there is no resistor contact through the field plate (7 in Fig. 1B, 39-1 in Fig. 9). Thus there is no embodiment, no statement, no suggestion, no implication, in Kondo that either of the contacts to the buried resistor extend THROUGH THE FIELD PLATE. Applicant's claimed invention, where the contact to the left side of the buried resistor extends through the field plate, eliminates not only the contact region 40-1 of Kondo but also the field oxide 38 separating the contact region from the field plate (see Fig. 7 of Kondo). Recognizing that the figures being compared are not to scale, the area savings by eliminating these elements can be quite significant.

The remaining claims, claims 37-39, 41 and 42 depend from claim 36, and patentability of these claims relies on the argument for patentability of independent claim 36 presented above.

A typographical error is noted in limitation b. of claim 36 where the word "forming" has been omitted. The Examiner is authorized to make a correction by Examiner's amendment.


In view of these amendments and remarks, reconsideration and allowance of claims 36-39, 41 and 42 is requested.

In the event that the Examiner concludes that a telephone call would advance the prosecution of this application, the Examiner is invited to call the undersigned attorney at Area Code 757-258-9018.

Procedure Question

Applicant requests a reply to this question: should the Examiner not allow this application in response to this paper, is the appeal that applicant filed earlier reinstated? Applicant has paid the appeal fee and the fee for filing an appeal brief. Do these fees continue to apply?

Respectfully,


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